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Internal Revenue Services
CC:PA:01:PR (REG-1211244-23)
Room 5503
P.O. Box 7604, Ben Franklin Station
Washington, DC 20044

Submitted via Regulations.gov

Re: Comments Requested Under REG-121244-23 On the Section 45Z Clean Fuel Production Credit

Thank you for the opportunity to comment on the Notice of Proposed Rulemaking REG-121244-23 (“Proposed Regulations”) relating to Internal Revenue Code[1] Section 45Z, the Clean Fuel Production Credit (“45Z Credit”), and the associated emissions rate table established under the Inflation Reduction Act of 2022 (“IRA”)[2]. This comment focuses on one clean fuel included in the 45ZCF-GREET model: coal mine methane ("CMM"). CMM is a source of alternative natural gas, which, when directly used as a transportation fuel, is a subset of Compressed Alternative Natural Gas ("CANG").[3] Within this letter, we provide the following comments:

1) Background on CMM
2) Economic and regional employment impact of CMM
3) Emissions Rate modeling of CMM within 45ZCF-GREET
4) Justification for enabling negative emissions rates for CMM as a process fuel, or production input.
5) Deliverability and permissibility of CANG as a process fuel to other transportation fuel production facilities

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[1] Unless otherwise indicated, all textual references to “section” herein are to sections of the Internal Revenue Code of 1986, as amended (the “Code”).
[2] Pub. L. 117-169, 136 Stat. 1982, 1990 (2022).
[3] Argonne National Laboratory, Guideline to Determine Life Cycle Greenhouse Gas Emissions of Clean Transportation Fuel Production Pathways Using 45ZCF-GREET https://www.energy.gov/sites/default/files/2025-05/45zcf-greet-user-manual-may2025.pdf.

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6) CANG gas quality: injection into a common carrier pipeline should be deemed permissible gas quality
7) CANG qualified sales evidence: injection into a common carrier pipeline should be evidence of a qualifying sale
8) CANG producer definition: the producer of CANG should be the operator who creates the CANG and injects it into the common carrier pipeline, not the dispenser who merely compresses it.

1) Background

Under Mine Safety and Health Administration strict safety requirements[4], mine operators are obligated to degasify mining operations to ensure worker safety and to maintain compliance with federal standards on the accumulation of methane in underground mines. The degasification of CMM is necessarily liberated from active underground mines and generally vented from abandoned or closed mines, in some cases decades after mining operations have ceased at the location. 45Z can turn CMM into a key energy resource: a low-GHG alternative natural gas resulting from upgraded waste gases which would have otherwise been wasted.

45Z can support the mining industry's critical role in domestic energy production by supporting methane capture investments and safeguarding the mining industry from certain future changes in law risks. 45Z policy should be viewed as a remedy to future-proof mining operations from domestic energy obstructionists and a way to promote sustainable mining operations, and drive the innovation and investment necessary to make CMM waste capture technically and economically feasible. 45Z can enhance economic development in coal communities by properly recognizing the role CMM can play in delivering energy to our domestic industries. Specifically, the productive use of CMM as a transportation fuel or in the production of fuels like ethanol, renewable diesel, and SAF could directly reduce the emissions rate of transportation fuel through an interconnected domestic energy supply chain. Proper treatment of CMM under the Proposed Regulations would enable significant volumes of reliable dispatchable low-carbon energy to enter our energy mix using existing transmission and storage infrastructure, and meet the growing needs of our modern economy.

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[4] Mine Safety and Health Administration, *30 CFR Part 75 – Mandatory Safety Standards for Underground Coal Mines.*

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2) Economic and regional employment impact of using CMM

Unfortunately, as of today, there is no clear economic incentive to capture CMM for productive use. However, the 45Z Credit could prove to be such an incentive if the implementation of this policy aligns with the goals of accelerating American energy dominance and improving domestic energy resilience.

Former coal regions that have suffered disproportionate and severe employment and economic consequences are well-positioned to serve as a foundation for a more efficient and sustainable economic future. Fortunately for the region and the administration's economic development and domestic energy security goals, the 45Z Credit has the potential to help achieve domestic energy security by utilizing waste within our region. A diversified fuel economy that utilizes CMM could help spur robust economic activity in disadvantaged areas, decrease energy costs to consumers, drive sustained job growth, improve air quality, decrease emissions, encourage partnerships with labor organizations, strengthen our existing regional supply chain, and generate new tax revenues in areas impacted by a shifting domestic energy landscape.

The 45Z credit provides the opportunity that mining communities deserve by creating a strong economic value proposition for capturing CMM and putting it to productive use in America's energy economy. Investments in these solutions, incentivized by the 45Z Credit, will bring quality jobs and economic development to mining communities that have been deeply impacted by the changing energy landscape. The Proposed Regulations, if properly applied, could be a consequential economic catalyst across an array of critical goals, including improving grid reliability, lower energy prices, increasing production of domestic low-carbon fuels, and providing substantial job creation in local communities negatively impacted by prior energy policy.

3) Emissions Rate modeling of CMM within 45ZCf-GREET

The IRS and Treasury REG-121244-23 provided the following guidance: *"In the 45ZCF-GREET model, for purposes of accounting for emissions associated with….natural gas alternatives (as a production input or as the transportation fuel produced)….rules similar to the rules under section 45V of the Code apply, unless otherwise specified by the 45ZCFGREET model with respect to technical modeling issues that are subsequently identified by the DOE or technical differences arising from the application of the section 45V rules to the 45ZCF-GREET model."*[5]

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Addressing technical modeling issues and technical differences arising from the application of Section 45V rules to Section 45Z should be within the Department of Energy's ("DOE") purview

WGCI agrees that the DOE is best qualified to resolve technical modeling issues and technical differences arising from the application of Section 45V rules to the 45ZCF-GREET model and thus should be provided the authority to do so. WGCI supports DOE's ongoing efforts to improve the accuracy of emissions rate quantification, including corrections to flawed background data assumptions in the 45VH2-GREET model.

Justification for recognition of venting in the CMM counterfactual scenario

In Argonne National Laboratory's ("ANL") R&D GREET 2025 model and associated Summary of Expansions and Updates in R&D GREET 2025, the lab outlines its justification for recognition of venting as a methane management practice for active underground coal mines:

> *"The mine operators chose to flare and destroy about 69% of the drainage CMM while venting the remaining about 31% to the atmosphere (See Table 1)."*

Table 1. Flaring and venting activities to manage drainage CMM from active, underground coal mines in 2023

	2023	
	CH_4 (MT/yr)	GHG using AR5 GWP 100 (MT CO_2e/yr)
CMM Degas Liberated	553,899	16,616,960
CMM Degas Captured and Destroyed	384,084	11,522,509
CMM Degas Vented	169,815	5,094,451
% Vented	30.7%	
% Destroyed (Flared)	69.3%	

> *"To reflect the industry average practice, a weighted average counterfactual scenario of 30.7% venting and 69.3% flaring is*

[5] REG-121244-23, Explanations of Provisions Section III.E.3.e.

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implemented in R&D GREET 2025 for diverting drainage CMM from active, underground coal mines to beneficial uses. This default option is added to a binary counterfactual scenario of either 100% flaring or 100% venting that were implemented in R&D GREET 2024. The new default is the common method in R&D GREET to aggregate different counterfactual scenarios into a statistical weighted average assumption for other resources such as manure, food waste, and wastewater sludge when they are diverted from common management practices to beneficial uses."

The experts at ANL conducted a significant in-depth diligence process and concluded that the carbon intensity must account for 30.7% venting in the counterfactual scenario. Relying on the experts at ANL, Treasury and IRS need not make a connection between Section 45Z and an unrelated Section 45V policy. Treasury has an obligation to recognize venting in CMM counterfactual scenarios under Section 45Z based on updated information from DOE, as the flaring assumption and its underlying justification from Section 45V are inapplicable in the context of Section 45Z.

Argonne's life cycle GHG emissions analysis was based on "post-mining drainage…from active, underground coal mines."[6] 45V policy defined CMM as "methane that is stored within coal seams and is liberated as a result of current or past mining activities. "Liberated" coal mine methane can be released intentionally by the mine for safety purposes, such as through mine degasification boreholes or underground mine ventilation systems, or it may leak out of the mine through vents, fissures, or boreholes. For the purpose of these regulations, the term coal mine methane does not include methane removed from virgin coal seams (for example, "coal bed methane")"[7]. DOE is considering counterfactual assumptions for CMM which may be reflected in future versions of the 45ZCF-GREET model. Until such updates are released, it is requested that Treasury acknowledge that CMM projects may petition Treasury for an emission rate through the Provisional Emission Rate (PER) process once that process is made available to taxpayers. And that, until either an updated 45ZCF-GREET model is published or the PER process becomes available, taxpayers may use counterfactual assumptions consistent with the facts and circumstances of their individual projects which may include an assumption that is not 100% flaring.

<u>The Emissions Rate of CMM in Section 45Z should be independent of the Section 45V counterfactual scenario assumptions</u>

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[6] Argonne National Laboratory, *R&D GREET 2025 Model and Supporting Documentation*
[7] Internal Revenue Service, *Section 45V Clean Hydrogen Production Credit Final Regulations (REG-132569-17)*.

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Treasury should clarify that the counterfactual scenario (or alternative fate) for the methane management of CMM in Section 45Z should be independent of Section 45V assumptions. The Section 45V CMM counterfactual scenario of flaring was a policy decision made with the objective of focusing hydrogen investments exclusively on a preferred technology solution (electrolysis) and deterring investments into other competitive technologies (steam methane reformation). The Section 45V CMM counterfactual assumption of flaring ignored CMM venting reported to the U.S. Environmental Protection Agency ("EPA") and instead incorporated a hypothetical assumption that a future regulation or requirement to flare would be instituted, despite no such requirement existing or having been proposed. As noted above, following the issuance of the Section 45V final regulations, the DOE has updated the R&D GREET model with a default carbon intensity informed by venting reported to EPA from coal mine degasification boreholes. Incorporating the latest technical insight from DOE is imperative and warranted. Nothing in the statute or regulations prohibits the Treasury from separating the legacy Section 45V CMM flaring assumption from Section 45Z to reflect real-world figures and incorporate the latest venting data recognized by DOE.

Policy differences between Section 45V and Section 45Z necessitate that counterfactual scenario differentiation for CMM be allowed in Section 45Z by Treasury

Treasury's justification for the CMM flaring baseline under Section 45V as the counterfactual scenario was based on the premise that a hydrogen facility would be eligible for a 10-year fixed carbon intensity and crediting period, and "uncertainties associated with future practices … while recognizing that most drainage gas is destroyed today." Unlike Section 45V, Section 45Z is a 5-year crediting period through 2029, with annual emissions rate model updates. If the counterfactual scenario for methane management of coal mine methane changes within the crediting period, the emissions rate should be changed to reflect the latest information within the applicable production year. There is little uncertainty with CMM capture regulations or practices today. To the extent they change in the future, the corresponding Section 45Z emissions rate may be adjusted during the applicable year of production, unlike the Section 45V emissions rate, which is fixed for the duration of the production facility. This difference in emissions rate timeframes justifies the use of different counterfactual assumptions under Section 45Z.

Accordingly, WGCI recommends that the IRS and the Treasury validate the 2025 R&D GREET Model default values, which properly account for the current methane management practices adopted by industry and reported to the EPA. Treasury should enable in 45Z DOE's conclusions to incorporate a CMM counterfactual weighted

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average for the category of CMM degasification boreholes originating from active underground mines and resulting in 30.7% venting and 69.3% flared.

4) Justification for enabling negative emissions rates for CMM as a process fuel, or production input.

The 45Z Credit may be claimed by taxpayers producing and selling qualifying transportation fuel. Section 45Z (d)(5)(A)[8] defines "Transportation Fuel" as follows:

"Transportation fuel….Has an emissions rate that is not greater than 50 kilograms of CO2e per mmBTU;….and (iv) Is not produced from a fuel for which a section 45Z credit is allowable."

The emissions rate referred to in 45Z(d)(5)(A)[9] is only applied to calculate the amount of the clean fuel production credit under IRC Section 45Z, which is equal to the product of the emissions factor and the applicable amount per gallon with respect to qualifying transportation fuel. According to Section 45Z(b)(1)(B)(i)[10] the Secretary is directed to annually publish a table which sets forth the emissions rate for similar types and categories of transportation fuels[11] based on the amount of lifecycle greenhouse gas[12] emissions (as described in section 211(o)(1)(H) of the Clean Air Act[13] (42 U.S.C. 7545(o)(1)(H)),[14] "as in effect on the date of the enactment of this section) for such fuels, expressed as kilograms of CO2e per mmBTU[15], which a taxpayer shall use for **purposes of this section.**"

Under Section 70521 of the One Big Beautiful Bill Act (H.R.1.)("OBBBA") negative emissions rates are prohibited for transportation fuel (except for transportation fuel derived from animal manure based RNG), under Section 45Z(b)(1)(E), as amended by Section 70521 of the One Big Beautiful Bill Act (H.R.1.)("OBBBA"). The statutory language unambiguously applies the prohibition on negative emissions rates only to

[8] 26 U.S.C. § 45Z(d)(5)(A)
[9] 26 U.S.C. § 45Z(d)(5)(A)
[10] 26 U.S.C. § 45Z(b)(1)(B)(i)
[11] 26 U.S.C. § 45Z(d)(5)
[12] 26 U.S.C. § 45Z(d)(3)
[13] 42 U.S.C. § 7545(o)(1)(H)
[14] 42 U.S.C. § 7545
[15] 26 U.S.C. § 45Z(d)(1)

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"transportation fuel," which by definition under 45(d)(5)(A) is fuel that qualifies for the 45Z PTC. Although the statutory language is narrow and although the emissions rate under Section 45Z is specifically intended to determine the amount of the credit, we are concerned, however, that with Proposed Regulation 1.45Z-2(d)(2)(i), Treasury has exceeded congressional intent and the purpose underlying IRC section 45Z by expanding the prohibition on negative emissions rates to process fuels used as production inputs. This is a direct contradiction of Section 70521 of the OBBA, which states that the prohibition applies only to the transportation fuel output that is eligible for the credit.

Proposed Regulation 1.45Z-2(d)(2)(i) confuses the critical distinction between credit-eligible transportation fuels and process fuels, which should only be a component of emissions modeling. Natural gas alternatives that would be utilized as a process fuel by producers of non-CANG transportation fuel utilize a distinctly separate process fuel emissions rate from the emissions rate for transportation fuel. In addition, the Proposed Regulation creates ambiguity by now defining certain process fuels as "transportation fuels" and undermines a distinction established by Congress under Section 45Z(d)(5)(A)(iv), which limits double-counting by excluding any "transportation fuel" produced from a fuel for which the 45Z PTC is allowable.

Further, Congress did not authorize Treasury to create a separate limitation on emissions rates for process fuels or inputs. Under IRC Section 45Z(e), Congress authorized the Secretary to "issue guidance regarding the implementation of this section, including calculation of emissions factors for transportation fuel, the table described in subsection (b)(1)(B)(i), and the determination of clean fuel production credits under this section." Further, Section 70521 of the OBBBA narrowly applies the prohibition on negative emissions rates to credit-eligible transportation fuels. The Treasury is limited to the powers conferred upon it by Congress, and such authority is expressly limited by the statutory text and structure.[16] The narrow language of Section 70521 of the OBBA was intentional, and Congress did not authorize Treasury to expand on the narrow language of the statute to extend the prohibition on negative emissions rates to process fuels. Accordingly, we do not believe that extending the prohibition on negative emissions rates to process fuel is aligned with Congressional intent or the statutory language, which clearly states that "the emissions rate for a transportation

[16] Mozilla Corp. v. FCC, 940 F.3d 1, 74 (D.C. Cir. 2019).

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fuel may not be less than zero." The program should recognize negative emissions rates for process fuel inputs as long as the transportation fuel output of the production process for which the production tax credit is claimed is non-negative.

5) Deliverability and permissibility of CANG as a process fuel to other transportation fuel production facilities

WGCI supports the proposed rule's recognition of the use of alternative natural gas as a process fuel to lower the emissions rate of ethanol and non-CANG fuels. Examples under the proposed rules recognize the shipment of clean fuel commingled with other products in a pipeline as achieving a qualified sale of the fuel. The effective prohibition of the use of interstate pipelines to transport clean fuels used as process fuels appears to be inconsistent with those examples. The delivery of alternative natural gas as a process fuel through the existing US common carrier pipeline system must be allowed. This is a high priority for US farmers, coal mining communities, and domestic fuel producers. Timely and definitive guidance from Treasury is essential for rural job creation.

When considering the delivery methodology of CANG as a process fuel to other transportation production facilities, book and claim delivery must be allowed. Physical delivery requirements would necessitate redundant and duplicative infrastructure, which would be wasteful. Natural gas infrastructure exists today and should be leveraged in combination with existing renewable fuel standards and low-carbon fuel standard delivery methods. If book and claim environmental attribute certificate programs are not adopted in 2026, Treasury should clarify that a contractual nomination process through an interstate pipeline is acceptable. Delivery through the common carrier pipeline system to the transportation fuel production facility should constitute sufficient documentation of exclusive physical delivery of such gas.

We highlight that the proposed certification approach proposed in § 1.45Z-4(g)(2) can be readily leveraged for a robust implementation of CMM delivery through the common carrier natural gas pipeline system. Qualified certifiers designated in the Proposed Regulations have existing competencies in this field through their work under ISO 14065 and the California Low Carbon Fuels Standard program. Third-party certification of low-GHG alternative natural gases may be useful for Clean Fuels Production Credit claims that include delivery of alternative natural gas as process fuel.

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6) CANG gas quality: injection into a common carrier pipeline should be deemed permissible gas quality

The Proposed Regulations provide that, "CANG is suitable for use once it is produced so that it is interchangeable with fossil natural gas and would require only minimal processing (for example, further compression or liquefaction) to meet the specifications of ASTM D8080."

Treasury should clarify that CANG that can demonstrate acceptance by a pipeline would be deemed suitable for use as a transportation fuel. Treasury should further recognize pipeline statements as sufficient documentation to establish injection of CANG into the natural gas pipeline system. For the avoidance of doubt, this interpretation should also be used for calendar year 2025, not limited only to production in 2026 and beyond.

It is appropriate to recognize "suitable for use" through pipeline injection documentation because the gaseous transportation fuel market has already widely established pipeline deliveries as the appropriate standard, and, accordingly, in actual industry practice, ASTM D8080 does not govern a CNG or LNG transportation fuel's suitability.

§ 1.45Z-1(b)(34)(ii)(A) of the proposed rules establishes that "To be considered suitable for use, a fuel need not actually be used as a fuel in a highway vehicle or aircraft." We strongly support this language, and final regulations should clarify that actual use as a transportation fuel is not required once the fuel has been established as suitable for use based on pipeline injection.

7) CANG qualified sales evidence

WGCI is supportive of the following language in the Proposed Regulations: "The term sold for use in a trade or business includes fuel sold to an unrelated person that subsequently resells the fuel in its trade or business." For the avoidance of doubt, this interpretation should also be used for calendar year 2025, not limited only to production in 2026 and beyond.

Pipeline injection statements into a common carrier pipeline should be evidence of a Qualifying sale. While the proposed provisions pertinent to documenting a Qualified sale and connected safe harbor status seem prudent and appropriate for most other

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fuels, we highlight that the injection of alternative natural gas to the common carrier natural gas pipeline system renders most of these provisions moot, unnecessary, and in some cases, prohibitive. Specifically, the pipeline injection of CMM renders it both chemically indistinguishable from traditional natural gas in the pipeline system, and its possible fate—i.e., the range of actually feasible outcomes of its value chain—is also within those outlined in the Qualifying sale provisions with an exceedingly high degree of certainty. Once CMM is injected into an interstate transmission common carrier pipeline, it is fully fungible with natural gas and realistically can only be "sold for use in a trade or business." Accordingly, treating the pipeline injection statement as documentation of a qualifying sale is entirely appropriate. Furthermore, CMM's fungibility with traditional natural gas in the pipeline system also means the proposed administrative process to document a qualified sale is overly burdensome and unnecessary.

Separately, Treasury should provide the alternative natural gas producer with the explicit option (i.e., dedicated field in Form 7218) to carve out volumes of their otherwise 45Z-eligible fuel, for which they chose not to claim the production tax credit.

8) CANG producer definition: the producer of CANG should be the operator who creates the CANG and injects it into the common carrier pipeline, not the dispenser who merely compresses it.

WGCI is supportive of the current definition of 'Producer' of alternative natural gas in § 1.45Z-1(b)(26)(ii) of the Proposed Regulations as the "person that processes the untreated sources of alternative natural gas to remove water, carbon dioxide, and other impurities such that it is interchangeable with fossil natural gas." This definition is consistent with the congressional intent of 45Z, incentivizing production of low-emissions fuels as the processor is the primary participant in the production process and is recognized as such.

We also agree that production of CANG should "not include compressing CANG that is already interchangeable with fossil natural gas to a higher pressure," since doing so would be a misallocation of the taxpayer dollars, providing incentives to distribution rather than the more cost-intensive production process. We request that Treasury maintain this well-conceived provision.

Conclusion

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The Section 45Z Credit is intended to incentivize the production and use of clean fuel while reducing emissions, lowering costs to consumers, and supporting job creation, particularly in regions that have been most impacted by prior energy policies. Clean fuel production in current and former mining communities aligns with these objectives. Accordingly, the final regulations should provide clear and workable guidance that encourages emissions reductions while increasing the production of clean fuel throughout the United States.

Current and former mining regions have an abundance of low-carbon intensity feedstocks, the technology to utilize those feedstocks, and a motivated, best-in-class labor force that can kickstart the clean fuel economy by using the available resources in this region. If implemented correctly, we can convert wasted energy to productive use while stimulating the economy and creating jobs, catalyzing a new middle class, and sustaining it for decades to come.

WGCI appreciates the opportunity to provide comments on the Proposed Regulations promulgated under Section 45Z of the Code to promote investments in clean energy across the United States. We respectfully urge the IRS and the Treasury to consider the recommendations made herein and provide additional clarity through forthcoming regulations and other guidance implementing the provisions under Section 45Z. If you have any questions regarding this submission, please contact contact@wastegascapture.com.

Sincerely,

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